

Department of Agriculture, Trade and Consumer Protection

Division of Marketing

Agricultural Development & Diversification Program (ADD)

1999 Grant Project Final Report

Contract Number: 13067

Grant Project Title: Atlantic Salmon Culture in Wisconsin (Year 1)

Project Beginning Date: September 1, 1998

Project End Date: September 1, 1999

Amount of Funding Awarded: \$ 9,840.00

Name of Principal Contact Person:

Chuck and Jenny Anderson

P.O. Box 111

Westfield, WI 53964

(608)296-2834

strout@palacenet.net

Grant Project Final Report
Sept. 1 1998 through Aug 31, 1999

Project Title: **Atlantic Salmon Culture in Wisconsin (Year 1)**
Contractor/ Grantee: **Chuck and Jenny Anderson**
Final Report by: **Artesian Trout Farm**
P.O. Box 111
Westfield, WI 53964-0111

1.) Describe the original intent of the grant project.

The grant project is specifically targeted at growth production and marketing of domesticated triploid Atlantic Salmon. Compiling this data and making it available for new and existing ventures. This and further research is needed to determine if it is cost effective for existing facilities to shift production to Atlantic Salmon.

- **How was it projected to benefit Wisconsin Agriculture?**

We are anticipating through the project efforts that successfully raising Atlantic Salmon will prove this species suitable for other aquaculture facilities and new capital ventures. Many of the states Wisconsin fish farms are limited by their use of natural resources. Because of higher retail prices for Atlantic Salmon farmers will see higher profit margins using the same amount of natural resources. Furthermore, will a shift in production increase the demand for Wisconsin grown Rainbow Trout? In some outlets trout farmers have met demand for Wisconsin grown Rainbow Trout, due to large production facilities in other states, Wisconsin farmers are forced into lower prices regardless of quality. Wisconsin consumers are well known for their dedication to buying quality locally grown products, expanding products may give farmers new niches in the market. Additionally, large ventures are difficult to fund, research and development is needed for investors to commit to big investments.

- **Was it necessary to adjust the objectives during the project?**

No, all of the objectives were met during the project. However, slightly slower growth than what was anticipated, this can be gained during the second year. Many more new objectives will be met as the fish become marketable size. The grow-out period will allow us time to carefully plan a marketing strategy.

2.) Describe the work conducted in this project.

During the early months of the project we prepared the hatchery and tanks for delivery for Atlantic Salmon eggs. We spent quite some time obtaining an importation permit through the Department of Natural Resources. This allows us to import an exotic non-native species into the state. We also visited some of the state hatcheries, particularly the Westfield State Hatchery. We observed them prepare and hatch Coho Salmon at different stages, the employees were very helpful to this project.

On Dec. 3, 1998 we received 25,000 Triploid Atlantic Salmon, all female eggs. Hatch went well, few eggs were lost. During the middle of January the yoc sack was completely consumed and we released the aelvins into the tanks. Although the salmon seem strong and healthy they stayed on the floor of the tanks. Feed was distributed 5 times a day with automatic feeders for back up. After endless efforts the salmon began to respond to feed much better. 90% of the mortality was experienced during the first month after release into the tanks. They seem to respond better in low lighting. Also, they become distressed when approached or disturbed. Dusk seems to be a peak feeding time throughout the entire project.

As of August 31, 1998 total mortality is 20%, 4 inch mean length. The total 20,000 Atlantic Salmon are now in a large grow-out earthen pond (200X40X8), 200gpm at approximately 55 degrees. We are concerned with the slow growth compared to past production with trout, however, we feel confident we can continue to attain our goals in year 2 of the grant project.

- **How did the grant funds assist you in this project?**

High cost of eggs, feed and shifting trout production is risky for a small production facility. Through the funding from this project we will provide relevant evidence to share in this uncertainty. Also, professionally this gave our business incentive for us to become involved in the industry.

- **What successes did you achieve with this grant project?**

We proved we can hatch out 25,000 Atlantic Salmon, continue through early feeding stages and release them into a grow-out facility within year one. This with acceptable mortalities and the anticipation for year 2 underway, can prove that Atlantic Salmon could be a prime species for other trout facilities and ventures.

- **What challenges did you face with your grant project?**

The legal importation permit by far was our largest challenge, this process should become much easier with time. We tried to obtain the permit during a reorganization of two very large agencies, we somewhat anticipated this challenge from the start. Secondly, endless efforts to entice the young fry to feed became very time consuming. However, in future hatches we will be able to surpass many of these unsuccessful efforts that were tried.

3.) Describe the public outreach efforts of this project.

- **What literature or educational materials were produced through this project?**

The public outreach for year one will be minimal, however, year two will prove more interesting. We have begun to add a web page to our current site that will include information on hatching, rearing and marketing Atlantic Salmon. We will have links to the Agriculture Department and other important sites.

- **What presentations, field days or other events were given related to this project?**

At present time we have given many individuals tours of the farm because of their interest in this project. We have received many phone calls and e-mails answering questions about Atlantic Salmon Culture in Wisconsin.

- **What media outreach did you conduct through this project? Please identify specific papers or stations.**

None at present time.

4.) Describe the results of this project.

- **Did the grant project results meet your original expectations? Why or why not?**

Yes, The plan of work was carried out as anticipated. We believe the information we gathered during early feeding of the Atlantic Salmon to be very valuable to the industry. We were quite uncertain if we could successfully hatch and raise the young aelvins through swim up, which is always the most difficult time during a trout hatch. The only disappointment of the project was the first bag of starter feed was spoiled, this may have changed the entire outcome of the project.

- **What new agricultural products, technologies or production methods were developed through this project? What conclusions can you make?**

At the end of year one, we have successfully raised 20,000 Atlantic salmon to 4.5 inches. This alone is a new innovative and valuable product that could be stocked in public and private waters. Nonetheless, we believe information will be the most valuable resource gained by raising Atlantic Salmon to a marketable food fish portion.

- **What did you learn from your grant project? What conclusions can you make?**

Behavior of Atlantic Salmon are quite different than that of a Rainbow trout. In the early months of feeding, disruption seems to frighten the fry, trout being much more calm and aggressive during feeding. Early planning could have eliminated this problem. Also, lighting should be kept very dim, we will attempt this earlier in the hatch. The Westfield State Hatchery believes a moist feed is especially beneficial during early feeding of Coho Salmon production.

Conclusion; we believe that Atlantic Salmon can be a viable and innovative species for new and existing trout farmers, grown and distributed much like trout. The decline in wild stocks and pollution in our oceans, could put Wisconsin in a great position for new large aquaculture ventures. Optimum temperature for Atlantic Salmon is much lower than Rainbow Trout, more suitable for Wisconsin's extreme conditions. Because of Wisconsin's abundant fresh water and the interest in sport fishing, fee fishing operations could also benefit greatly from this project.

- **How will the grant results affect your business?**

Because of the accomplishments of this project, our farm will continue to raise and develop Atlantic Salmon as a new and diverse product. We are especially interested in a smoked product, we are currently distributing smoked Rainbow Trout. Although profits may not be realized for a few years, we feel its a worthwhile endeavor to develop new and value added products from Wisconsin grown Atlantic Salmon. The Wisconsin Department of Agriculture predicts nothing but continued growth for aquaculture, as the worlds commercial fisheries continue to decline.

- **How will this project benefit the Wisconsin family farm?**

This project is directed towards Wisconsin trout farmers in particular.

- Current trout operations can benefit by diversifying and developing new and value added products. There is a large demand by consumers for locally grown quality products.
- New jobs and increased profits from new and existing aquaculture facilities, which are usually located in rural areas, will stimulate economic growth.
- Many agricultural farms in Wisconsin have the resources to supplement farm income by start up of small scale systems.
- Fresh water fee fishing operations in Wisconsin would benefit by offering an Atlantic Salmon as a prized sport fish.
- Research and Development are needed for investors to commit to fund new and existing ventures.

- **What impact will this grant project have on the future of Wisconsin agriculture?**

All of the above achievements will stimulate improvement in Wisconsin's competitive position in the agricultural industry.

5.) How will the Wisconsin agriculture industry be able to use the information from this project?

The agriculture industry as a whole needs continuous research, development and technology if it is to advance into future efforts. Anyone contacting the Agriculture Department will have access to this grant information. Our farm will promote raising Atlantic Salmon by referrals from the Agriculture Department, Natural Resources or through our web site. This allows anyone to easily contact us. Future information on development of this species will be available to anyone interested.

6.) Include any research data that supports your conclusions for this project.

N/A, Year 2 will include a health assessment and other research data.